

Determination of Public Land (Rangeland) Health for 64053 JAMES CLIETT

The Record of Decision (ROD) for the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (dated January 2001) adopted three Standards for Public Land Health. These are (1) Upland Sites Standard, (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard and (3) Riparian Sites Standard.

The ROD also established a process for the BLM Field Offices for the implementation. Through a public participation process, the Roswell Field Office developed and adopted indicators to use in conjunction with existing monitoring data to assess these Standards.

Field assessment worksheets and other available data which evaluate the local indicators, were completed for this allotment. Based on the assessments, it is my determination that the Public Lands within the James Cliett Allotment #64053 meet the Upland Sites Standard and (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard. There are no Public Land riparian areas on this allotment, therefore this Standard will not be addressed.

/s/ T. R. KREAGER

Assistant Field Manager

09/22/2003

Date

Standards of Public Land Health

Evaluation of 64053 JAMES CLIETT Allotment

[09/02/2003]

The Roswell Field Office conducted rangeland health assessments at three study sites within the JAMES CLIETT Allotment #64053. The assessments looked at the Soil/Site Stability, Hydrologic Function and Biotic Integrity indicators within the vicinity of each study site. Existing monitoring data was incorporated into and in support of the field assessment. The summary of each assessment is attached and shown in the following table.

| Study Area or Assessment Area | UPLAND | | | BIOTIC | | | RIPARIAN | | |
|--|--------|----------------------------|---------------------|--------|----------------------------|---------------------|----------|----------------------------|---------------------|
| | Meets | Monitor an Indicator | Does Not Meet | Meets | Monitor an Indicator | Does Not Meet | Meets | Monitor an Indicator | Does Not Meet |
| 64053-BIG-E100 (*) | X | * | | X | | | N/A | | |
| 64053-NORTH-E099 | X | | | X | | | N/A | | |
| 64053-RIVER-E098 | X | | | X | | | N/A | | |

Twenty-two (22) indicators for Rangeland Health were evaluated for the James Cliett Allotment 64053; 10 of these assessed met Ranch; 10 of these assessed soil/site stability, 11 assessed hydrologic functions and 13 assessed biotic integrity. These qualitative assessments along with quantitative information from long-term monitoring studies on three study areas, were utilized to assess the rangeland health of the public land within the allotment. These quantitative evaluations were performed by the Roswell Field office staff starting in the early 1980's. These included ground and vegetative cover and composition, production, frequency, and ecological condition as calculated from these collections which have been scheduled approximately every 5 years.

Drought conditions have had an impact on the allotment over the last few years. Assessments were performed on 3 trend plot/study sites, corresponding to 3 pastures on the allotment. North, River and Big Pastures were assessed; SD-3 gyp upland, loamy and salt flats respectively. The salt flats ecological site (Big Pasture) is located off US highway 70. This pasture is mostly a grassland aspect with tobosa (*Pleuraphis mutica*), and alkali sacaton (*Sporobolus airoides*) dominating. This area has a Hollomex soil phase, 50 cm in depth. There is currently no livestock use or past evidence of use this growing season. Tobosa swales are evident where there is a greater amount of runoff into these areas. Pedestals and/or terracettes show slight active pedestalling on the upland area, especially elevating tobosa plants as well as dropseed. This indicator was rated as Moderate. Bareground is being estimated to be approximately 70%, exceeding the ESD

of 60% and the long-term average of 49%. A Moderate to Extreme rating was given to this indicator. Functional/structural groups rated in the Moderate category, with F/S groups such as alkali sacaton and black grama (*Bouteloua eriopoda*) being reduced and replaced by other subdominant groups, ie. tobosa and dropseeds, as the ESD indicates. Long-term datum also supports this rating. Litter amount is only estimated at 10% and was rated at Moderate. Annual production is only 1/2 of the long-term average and 1/4 of the maximum potential for the ESD, resulting in a rating in the Moderate category. Invasive plants rated in the Moderate category with prickly pear (*Opuntia* spp.) scattered throughout the site. The reproductive capability of perennial plants also rated in the Moderate category. There is limited tiller and seed head formation and the propagation potential will be limited to seed previously produced and currently existing in the soil substratum. With precipitation events occurring at the appropriate time, as well as the dormant season, the reproductive potential should improve for those species. Physical crusts are evident throughout, with some broken continuity on the biological crusts. The physical crusts however are holding the soil in place until favorable precipitation events occur. This indicator rated in the Slight to Moderate category. All other indicators rated None to Slight to Slight to Moderate.

The River Pasture, the SD-3 loamy ecological site with an Alama-Poquita soil phase rated all indicators in the None to Slight to Slight to Moderate category, with the exception of invasive plants, rating in the Moderate category. Cholla (*Opuntia imbricata*) is observed only scattered throughout. The site covers approximately 200 acres on the upland side of the allotment. This area provides excellent habitat for pronghorn (*Antilocapra americana*), which can be observed in this pasture. The grass, forb and shrub components are conducive to this and other wildlife species. The area possesses a good mixture of grass, forb and shrub components. Only slight modifications exist from the ESD structural/functional groups, and the long-term datum. The timely rainfall events during the summer of 2003 have improved this site's potential and overall condition. The livestock have been removed in the spring of this year due to the rotational scheme. The use is mainly in the winter time from approximately November thru February. There is nothing inhibiting the reproductive capability of any of the perennial species present, with healthy seed/tiller formation. There is however a proposed oil and gas well staked just south of this pasture, which may compromise some wildlife habitat and forage potential for livestock.

The North Pasture, a CP-2 gyp upland ecological site, is made up of very shallow gyp soil. The area covers approximately 613 acres, with a Hollomex-Reeves-Milner soil phase. This area rated water flow patterns, which are slope dependent on this site, in the Moderate category. There is some erosion and soil deposition, largely due to the natural make-up of the soil itself. There is some slight active pedestaling on the plants present, and this largely is due also to the slope dependence of this particular site. This indicator rates Moderate. Bareground is estimated at approximately 60-70%. This exceeds the upper expected range for the ESD at 45%. Long-term datum however indicates a range from 55-88% with an average of 67%, resulting in a Moderate rating. There is some expected channelization on this site as the gullying potential is slope dependent as well. There is however no sign of active headcuts or nickpoints. Vegetation is still stabilizing

the slopes. This indicator rated Slight to Moderate. Soil surface resistance to erosion rates at Moderate. There is some reduction in resistance in the interspaces as well as the plant canopy, using the soil site stability test. The percent litter estimated, falls in the bottom end of the range expected for the ESD. Eight percent is the long-term average, and rates Moderate. Annual production is 1/2 of ESD for normal years and rated in the Moderate category also. Dry conditions have contributed to the reduced productive potential. Invasive plants rated Moderate with mesquite (*Prosopis glandulosa*) scattered throughout. All other indicators rate None to Slight to Slight to Moderate. The vegetation present is representative of a gyp upland site, with coldenia (*Coldenia* spp.), gyp grama (*Bouteloua brevesita*) and gyp dropseed (*Sporobolus nealleyi*) on site. The roads leading into this pasture follow oil and gas pipeline routes and the compaction layer associated with this activity covers 5-10% of the surface. This indicator rated in the Slight to Moderate category. There is no current livestock use in this pasture at the moment.

The drought and wind and water erosion in the area of the Big has possibly decreased the amount of plant cover and possibly decreased infiltration into the soil which may have increased the occurrence of pedestalling on plants and rocks and also increased the percentage of bare ground. The indicators for pedestalls rated as moderate. The indicators for bare ground rated as moderate to extreme. The drought and wind and water erosion in the area of the Big has had a minor affect on the soils and hydrologic indicators which rated as none to slight and slight to moderate. These indicators are rills, water flow patterns, gullies, wind scoured blowouts and/or depostions areas, litter movement, soil surface resistance to erosion, soil surface loss or degradation, plant community compositon and distribution relative to infiltration and runoff, compaction layer, litter amount and physical crusts. Rock outcrops of gypsum and dolomite occur in the area from the Seven Rivers Formation. Quaternary alluvium deposits outcrop in the area. Quaternary terrace gravels deposits outcrop in the area. The HOLLOMEX soils in the area are underlain by gypsum, mudstone, and dolomite of the Seven Rivers Formation, Quaternary alluvium deposits, and Quaternary terrace gravel deposits.

The water erosion is minor in the area of the North. The drought and wind and water erosion in the area has possibly decreased the amount of plant cover and possibly decreased infiltratioin into the soil which may have increased the occurrence of pedestalling on plants and rocks. Water and wind has eroded the soils which has the affect of elevating the plants and rocks to form pedestalls. The drought and water and wind erosion in the area has possibly increased the amount of bare ground. The drought and wind and water erosion and other factors have reduced the stabilizing agents such as aggregated organic matter at surface and decreased the adhesion of organic matter to surface soils. Rock outcrops of gypsum and dolomite occur in the area from the Seven Rivers Formation. Quaternary alluvium deposits outcrop in the area. Quaternary terrace gravels deposits outcrop in the area. The HOLLOMEX soils in the area are underlain by gypsum, mudstone, and dolomite of the Seven Rivers Formation, Quaternary alluvium deposits, and Quaternary terrace gravel deposits.

It is the professional opinion of the Assessment Team that the public land within this allotment meets the Upland and Biotic standards.

The (*) indicates that the assessment had one or more indicator(s) rated moderate/extreme or extreme. These indicators are:

- Bare Ground

These indicators by themselves are not enough to rate the site as not meeting a standard but may warrant future monitoring.

Recommendations: Monitoring should continue on this allotment and up to date datum is necessary. The allottee deploys a grazing rotation which is advantageous to the health of the range, both public as well as private land.

| RFOs Upland and Biotic Standard Assessment Summary Worksheet | | | | | | |
|--|---|---|---|----------|--------------------|----------------|
| SITE 64053-BIG-E100 | | | | | | |
| Legal Land Desc | SENE 24 0090S 0240E Meridian 23 | | Acreage | | 3933 | |
| Ecosite | 042CY036NM SALT FLATS SD-3 | | Photo Taken | | Y | |
| Watershed | 13060007010 GOPHER | | | | | |
| Observers | SPAIN/NAVARRO/MCGEE | | Observation Date | | 09/09/2003 | |
| County Soil Survey | NM644 CHAVES NORTH | | Soil Var/Taxad | | | |
| Soil Map Unit | HhA | | Soil Taxon Name | | HOLLOMEX | |
| Texture Class | NM644 L | | Soil Phase | | HOLLOMEX | |
| Texture Modifier | NM644 LOAM | | | | | |
| Observed Avg Annual Precipitation | | | Observed Avg Growing Season Precipitation | | | |
| NOAA Annual Precipitation | 11.8 | | NOAA Growing Season Precipitation | | 7.46 | |
| NOAA Avg Annual Precipitation | 11.89 | | NOAA Avg Growing Season Precipitation | | 9.54 | |
| Disturbances and Animal Use: | | | | | | |
| Part 2. Attributes and Indicators | | | | | | |
| | | Departure from Ecological Site Description/Ecological Reference Areas | | | | |
| Attribute | Indicators | Extreme | Moderate to Extreme | Moderate | Slight to Moderate | None to Slight |
| | | | | | | |
| S H | Rills | | | | | X |
| Comments: | | | | | | |
| S H | Water Flow Patterns | | | | X | |
| Comments: | Drought effects | | | | | |
| S H | Pedestals and/or Terracettes | | | X | | |
| Comments: | Very dry conditions have left the vegetation somewhat subject to possible wind and water erosion. | | | | | |
| S H | Bare Ground | | X | | | |

| | | | | | | |
|-----------|---|--|--|---|---|---|
| Comments: | Percent bareground exceeds the upper expected range for the ESD. | | | | | |
| S H | Gullies | | | | | X |
| Comments: | | | | | | |
| S | Wind-scoured, Blowouts, and/or Deposition Areas | | | | X | |
| Comments: | | | | | | |
| H | Litter Movement | | | | X | |
| Comments: | Litter being displaced and is starting to gather against obstructions. | | | | | |
| S H B | Soil Surface Resistance to Erosion | | | | X | |
| Comments: | Reduction in soil surface stability in interspaces. Not as pronounced under canopy. | | | | | |
| S H B | Soil Surface Loss or Degradation | | | | X | |
| Comments: | | | | | | |
| H | Plant Community Composition and Distribution Relative to Infiltration and Runoff | | | | X | |
| Comments: | | | | | | |
| S H B | Compaction Layer | | | | | X |
| Comments: | No livestock trails seen. | | | | | |
| B | Functional/Structural Groups | | | X | | |
| Comments: | Tobosa (<i>Pleuraphis mutica</i>) and dropseed (<i>Sporobolus</i> spp.) are the dominant grasses. Some globemallow (<i>Sphaeralcea</i> spp.) on site. | | | | | |
| B | Plant Mortality/Decadence | | | | X | |
| Comments: | 20-30% mortality. | | | | | |
| H B | Litter Amount | | | X | | |
| Comments: | Very little litter present; approximately 10%, except for that which is up against obstructions. Dry conditions and the absence of adequate growing season precipitation have augmented this problem. | | | | | |
| B | Annual Production | | | X | | |
| Comments: | There is about 250-300 lbs/ac or 250-300 kg/ha at the present time. | | | | | |
| B | Invasive Plants | | | X | | |
| Comments: | Prickly pear (<i>Opuntia</i> spp.) is the species of shrub scattered throughout. | | | | | |
| B | Reproductive Capability of Perennial Plants | | | X | | |
| Comments: | There are few plants with tillers/seed heads present. | | | | | |

| | | | | | | |
|-----------|---|--|--|--|---|---|
| S | Physical/Chemical/Biological Crusts | | | | X | |
| Comments: | Physical crusts holding soils in place. Some biological crusts are evident but only in scattered patches. | | | | | |
| B | Wildlife Habitat | | | | X | |
| Comments: | | | | | | |
| B | Wildlife Populations | | | | X | |
| Comments: | | | | | | |
| B | Special Status Species Habitat | | | | | X |
| Comments: | None known to occur. | | | | | |
| B | Special Status Species Populations | | | | | X |
| Comments: | None known to occur. | | | | | |
| | | | | | | |

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

| Standard Attribute | | Extreme | Moderate to Extreme | Moderate | Slight to Moderate | None to Slight |
|--------------------|------------|---------|---------------------|----------|--------------------|----------------|
| S | Soil | 0 | 1 | 1 | 5 | 3 |
| H | Hydrologic | 0 | 1 | 2 | 5 | 3 |
| B | Biotic | 0 | 0 | 5 | 5 | 3 |

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

| Attribute | Rationale | Does Not Meet | May Need More | Meets |
|-----------|-----------|---------------|---------------|-------|

| | | | | |
|-------------|--|---|------|---|
| | | | Info | |
| Soil | Bareground is currently at 70% or so. Dry conditions have contributed to the absence of perennial plant cover and litter. This soil /hydrologic attribute condition can be improved with favorable precipitation events. | 1 | 1 | 8 |
| Hydrologic | This is not a riparian issue. However the salt flat area should be referred to the upland rationale for determination. | 1 | 2 | 8 |
| Biotic | | 0 | 5 | 8 |
| Site Notes: | | | | |

| RFOs Upland and Biotic Standard Assessment Summary Worksheet | | | | | | |
|--|---|--|---|----------|--------------------------------|----------------------|
| SITE 64053-NORTH-E099 | | | | | | |
| Legal Land Desc | NWNE 1 0090S 0240E Meridian 23 | | Acreage | | 613 | |
| Ecosite | 070BY066NM GYP UPLAND CP-2 | | Photo Taken | | Y | |
| Watershed | 13060005070 SALT | | | | | |
| Observers | SPAIN/NAVARRO/MCGEE | | Observation Date | | 09/12/2003 | |
| County Soil Survey | NM644 CHAVES NORTH | | Soil Var/Taxad | | | |
| Soil Map Unit | HMA | | Soil Taxon Name | | HOLLOMEX | |
| Texture Class | NM644 L | | Soil Phase | | HOLLOMEX- REEVES- MILNER | |
| Texture Modifier | NM644 LOAM,DRY | | | | | |
| Observed Avg Annual Precipitation | | | Observed Avg Growing Season Precipitation | | | |
| NOAA Annual Precipitation | 11.8 | | NOAA Growing Season Precipitation | | 7.46 | |
| NOAA Avg Annual Precipitation | 11.89 | | NOAA Avg Growing Season Precipitation | | 9.54 | |
| Disturbances and Animal Use: | There is some oil and gas activity in the vicinity, with roads and pipelines. No animal disturbances can be seen at the present time. | | | | | |
| Part 2. Attributes and Indicators | | | | | | |
| | | Departure from Ecological Site Description/Ecological Reference Areas | | | | |
| Attribute | Indicators | Extreme | Moderate to Extreme | Moderate | Slight to Moderate | None to Slight |
| | | | | | | |
| S H | Rills | | | | X | |
| Comments: | | | | | | |
| S H | Water Flow Patterns | | | X | | |
| Comments: | Slope dependent | | | | | |

| | | | | | | |
|-----------|--|--|--|---|---|---|
| S H | Pedestals and/or Terracettes | | | X | | |
| Comments: | Some active pedestaling. | | | | | |
| S H | Bare Ground | | | X | | |
| Comments: | Now at 60-70%. | | | | | |
| S H | Gullies | | | | X | |
| Comments: | Slope dependent;some channelization expected. | | | | | |
| S | Wind-scoured, Blowouts, and/or Deposition Areas | | | | | X |
| Comments: | | | | | | |
| H | Litter Movement | | | | X | |
| Comments: | Litter is everywhere and scattered. | | | | | |
| S H B | Soil Surface Resistance to Erosion | | | X | | |
| Comments: | | | | | | |
| S H B | Soil Surface Loss or Degradation | | | | X | |
| Comments: | | | | | | |
| H | Plant Community Composition and Distribution Relative to Infiltration and Runoff | | | | X | |
| Comments: | | | | | | |
| S H B | Compaction Layer | | | | X | |
| Comments: | Oil and gas activity as evidenced by the roads. | | | | | |
| B | Functional/Structural Groups | | | | X | |
| Comments: | Coldenia (Coldenia spp) seen along with other gyp plants. | | | | | |
| B | Plant Mortality/Decadence | | | | | X |
| Comments: | | | | | | |
| H B | Litter Amount | | | X | | |
| Comments: | | | | | | |
| B | Annual Production | | | X | | |
| Comments: | | | | | | |
| B | Invasive Plants | | | X | | |
| Comments: | Mesquite (Prosopis glandulosa) scattered. | | | | | |
| B | Reproductive Capability of Perennial Plants | | | | X | |
| Comments: | | | | | | |

| | | | | | | |
|---|-------------------------------------|-----------------------|---------------------|--------------------|--------------------|----------------|
| S | Physical/Chemical/Biological Crusts | | | | | X |
| Comments: | | Physical crusts seen. | | | | |
| B | Wildlife Habitat | | | | X | |
| Comments: | | | | | | |
| B | Wildlife Populations | | | | X | |
| Comments: | | | | | | |
| B | Special Status Species Habitat | | | | | X |
| Comments: | | None known to occur. | | | | |
| B | Special Status Species Populations | | | | | X |
| Comments: | | None known to occur. | | | | |
| | | | | | | |
| Part 3. Summary | | | | | | |
| A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes. | | | | | | |
| | | | | | | |
| Standard Attribute | | Extreme | Moderate to Extreme | Moderate | Slight to Moderate | None to Slight |
| S | Soil | 0 | 0 | 4 | 4 | 2 |
| H | Hydrologic | 0 | 0 | 5 | 6 | 0 |
| B | Biotic | 0 | 0 | 4 | 6 | 3 |
| | | | | | | |
| B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the <i>Does not Meet</i> column, Moderate becomes <i>May Need More Info</i> , and Slight to Moderate and None to Slight merge to form the <i>Meets</i> columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team. | | | | | | |
| | | | | | | |
| Attribute | Rationale | Does Not Meet | | May Need More Info | Meets | |

| | | | | |
|---|--|---|---|---|
| Soil | | 0 | 4 | 6 |
| Hydrologic | | 0 | 5 | 6 |
| Biotic | | 0 | 4 | 9 |
| Site Notes: The site is in a gyp upland area and the oil and gas activity, ie, roads and pipelines have affected a portion of this ecological site. | | | | |

| RFOs Upland and Biotic Standard Assessment Summary Worksheet | | | | | | |
|--|---|---|---|----------|--------------------|----------------|
| SITE 64053-RIVER-E098 | | | | | | |
| Legal Land Desc | SWNE 4 0090S 0250E Meridian 23 | | Acreage | | 199 | |
| Ecosite | 042CY007NM LOAMY SD-3 | | Photo Taken | | Y | |
| Watershed | 13060005080 MACHO | | | | | |
| Observers | SPAIN/NAVARRO/MCGEE | | Observation Date | | 09/12/2003 | |
| County Soil Survey | NM644 CHAVES NORTH | | Soil Var/Taxad | | | |
| Soil Map Unit | APA | | Soil Taxon Name | | ALAMA | |
| Texture Class | NM644 FSL | | Soil Phase | | ALAMA- POQUITA | |
| Texture Modifier | NM644 DRY | | | | | |
| Observed Avg Annual Precipitation | | | Observed Avg Growing Season Precipitation | | | |
| NOAA Annual Precipitation | 11.8 | | NOAA Growing Season Precipitation | | 7.46 | |
| NOAA Avg Annual Precipitation | 11.89 | | NOAA Avg Growing Season Precipitation | | 9.54 | |
| Disturbances and Animal Use: | There is a proposed gas well in the vicinity which may compromise the biotic and hydrologic integrity of this site. | | | | | |
| Part 2. Attributes and Indicators | | | | | | |
| | | Departure from Ecological Site Description/Ecological Reference Areas | | | | |
| Attribute | Indicators | Extreme | Moderate to Extreme | Moderate | Slight to Moderate | None to Slight |
| | | | | | | |
| S H | Rills | | | | | X |
| Comments: | | | | | | |
| S H | Water Flow Patterns | | | | X | |
| Comments: | | | | | | |
| S H | Pedestals and/or Terracettes | | | | X | |
| Comments: | Some slight pedestaling. | | | | | |
| S H | Bare Ground | | | | X | |

| | | | | | | |
|-----------|---|--|--|---|---|---|
| Comments: | now estimates show 50%. | | | | | |
| S H | Gullies | | | | | X |
| Comments: | | | | | | |
| S | Wind-scoured, Blowouts, and/or Deposition Areas | | | | | X |
| Comments: | | | | | | |
| H | Litter Movement | | | | | X |
| Comments: | | | | | | |
| S H B | Soil Surface Resistance to Erosion | | | | X | |
| Comments: | | | | | | |
| S H B | Soil Surface Loss or Degradation | | | | X | |
| Comments: | | | | | | |
| H | Plant Community Composition and Distribution Relative to Infiltration and Runoff | | | | | X |
| Comments: | | | | | | |
| S H B | Compaction Layer | | | | | X |
| Comments: | | | | | | |
| B | Functional/Structural Groups | | | | X | |
| Comments: | | | | | | |
| B | Plant Mortality/Decadence | | | | | X |
| Comments: | | | | | | |
| H B | Litter Amount | | | | X | |
| Comments: | | | | | | |
| B | Annual Production | | | | X | |
| Comments: | | | | | | |
| B | Invasive Plants | | | X | | |
| Comments: | Cholla (<i>Opuntia imbricata</i>) scattered throughout. | | | | | |
| B | Reproductive Capability of Perennial Plants | | | | | X |
| Comments: | All plants have vigorous growth and vitality. All grasses, including forbs have good reproductive potential. | | | | | |
| S | Physical/Chemical/Biological Crusts | | | | | X |

| | | | | | | |
|-----------|---|--|--|--|---|---|
| Comments: | Physical crusts evident. | | | | | |
| B | Wildlife Habitat | | | | X | |
| Comments: | Pronghorn (<i>Antilocapra americana</i>) can be seen and the habitat is prime for this species. | | | | | |
| B | Wildlife Populations | | | | X | |
| Comments: | Populations of pronghorn (<i>Antilocapra americana</i>), are thriving. | | | | | |
| B | Special Status Species Habitat | | | | | X |
| Comments: | None known to occur. | | | | | |
| B | Special Status Species Populations | | | | | X |
| Comments: | None known to occur. | | | | | |
| | | | | | | |

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

| Standard Attribute | | Extreme | Moderate to Extreme | Moderate | Slight to Moderate | None to Slight |
|--------------------|------------|---------|---------------------|----------|--------------------|----------------|
| S | Soil | 0 | 0 | 0 | 5 | 5 |
| H | Hydrologic | 0 | 0 | 0 | 6 | 5 |
| B | Biotic | 0 | 0 | 1 | 7 | 5 |

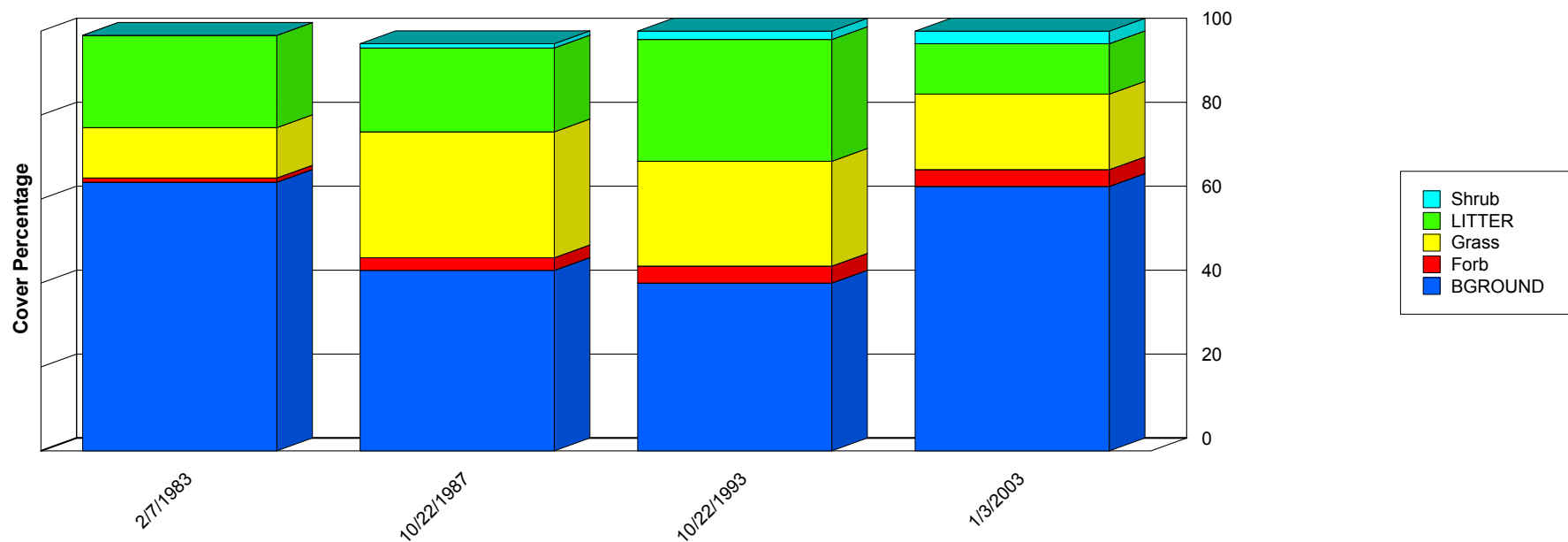
B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

| Attribute | Rationale | Does Not Meet | May Need More Info | Meets |
|-----------|-----------|---------------|--------------------|-------|
| Soil | | 0 | 0 | 10 |

| | | | | |
|------------|--|---|---|----|
| Hydrologic | | 0 | 0 | 11 |
| Biotic | | 0 | 1 | 12 |

Site Notes: This site is in excellent condition. The timely summer precipitation events coupled with the removal of livestock in February/March of 2003, has more than given this site a chance to recover from the dry conditions affecting the general area. However with some winter precipitation, this site could show a progression toward an excellent multi-use area. There is however, a proposed oil and gas site in the vicinity which may increase vehicular traffic and compromise some habitat for wildlife, and conservative use by livestock.

Ground Cover Trends



| | 2/7/1983 | 10/22/1987 | 10/22/1993 | 1/3/2003 |
|---------|----------|------------|------------|----------|
| BGROUND | 64.00 | 43.00 | 40.00 | 63.00 |
| Forb | 1.00 | 3.00 | 4.00 | 4.00 |
| Grass | 12.00 | 30.00 | 25.00 | 18.00 |
| LITTER | 22.00 | 20.00 | 29.00 | 12.00 |
| Shrub | 0.00 | 1.00 | 2.00 | 3.00 |
| Total | 99.00 | 97.00 | 100.00 | 100.00 |

Report Parameters

SITE NAME LIKE 64053-BIG-E100
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2003

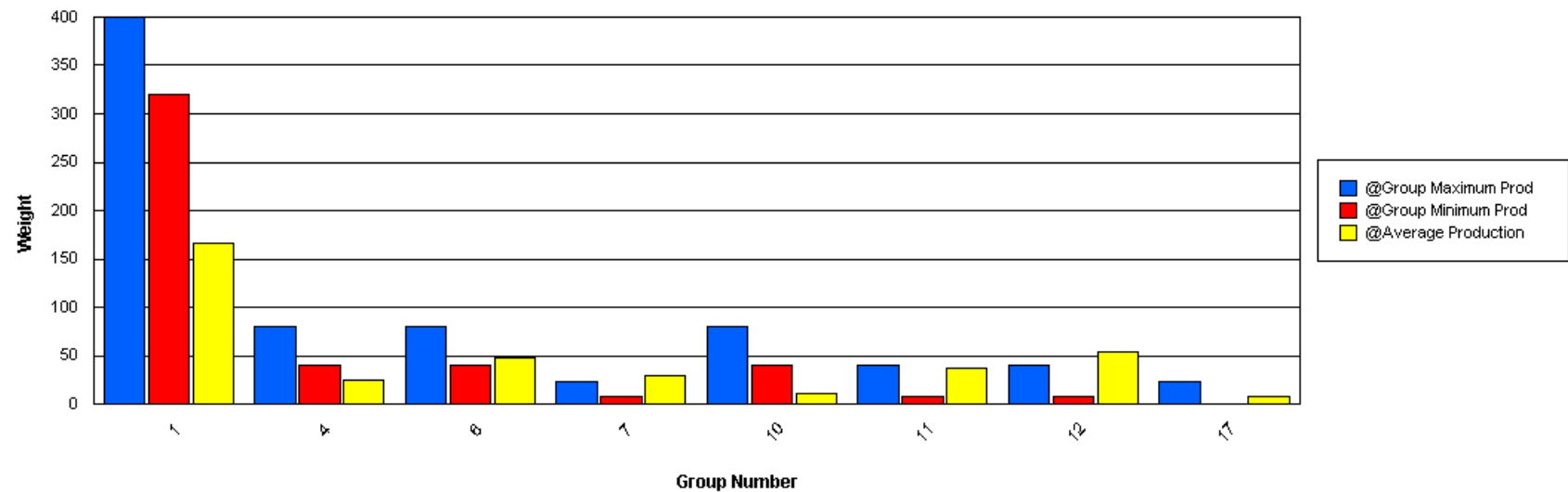
Functional / Structural Groups

Report Parameters

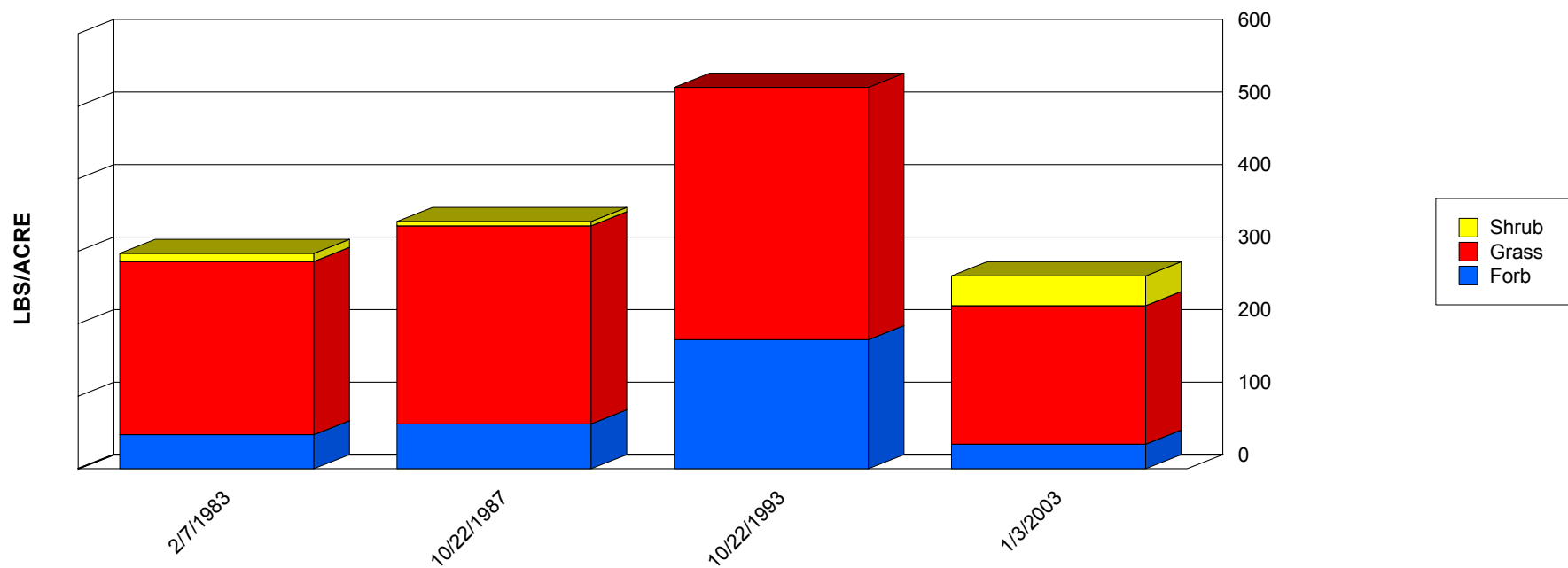
SITE NAME LIKE 64053-BIG-E100
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2003
 MIN LBS TO GRAPH 3
 SELECTED ECOSITE 042CY036NM

| Group | Plant Type | Species | Low Wt Allowed | High Wt Allowed | Minimum | Maximum | Average | STDEV |
|-------|------------|---------|----------------|-----------------|---------|---------|---------|-------|
| 1 | Grass | SPAI | 320 | 400 | 115.00 | 267.00 | 165.75 | 61.66 |
| 3 | Grass | BOER4 | 40 | 80 | 1.00 | 5.00 | 2.67 | 1.70 |
| 4 | Grass | SPNE | 40 | 80 | 15.00 | 29.00 | 22.25 | 5.07 |
| 4 | Grass | SPORO | 40 | 80 | 2.00 | 3.00 | 2.50 | 0.50 |
| 6 | Grass | ARIST | 40 | 80 | 0.00 | 10.00 | 6.00 | 4.32 |
| 6 | Grass | ERPU8 | 40 | 80 | 0.00 | 38.00 | 17.00 | 15.77 |
| 6 | Grass | HIMU2 | 40 | 80 | 7.00 | 32.00 | 24.25 | 10.13 |
| 7 | Grass | BOBR | 8 | 24 | 1.00 | 27.00 | 11.00 | 11.43 |
| 7 | Grass | BOGR2 | 8 | 24 | 1.00 | 8.00 | 5.33 | 3.09 |
| 7 | Grass | BOSA | 8 | 24 | 0.00 | 11.00 | 5.50 | 5.50 |
| 7 | Grass | MUAR | 8 | 24 | 0.00 | 14.00 | 7.00 | 7.00 |
| 7 | Grass | TRPI2 | 8 | 24 | 0.00 | 1.00 | 0.50 | 0.50 |
| 10 | Forb | COLDE | 40 | 80 | 0.00 | 28.00 | 11.67 | 11.90 |
| 11 | Forb | AAFF | 8 | 40 | 0.00 | 77.00 | 29.00 | 30.85 |
| 11 | Forb | DEPI | 8 | 40 | 0.00 | 8.00 | 4.00 | 4.00 |
| 11 | Forb | FACEL | 8 | 40 | 0.00 | 7.00 | 3.50 | 3.50 |
| 12 | Forb | PPFF | 8 | 40 | 6.00 | 101.00 | 53.50 | 47.50 |
| 17 | Shrub | GUSA2 | 0 | 24 | 5.00 | 11.00 | 7.33 | 2.62 |

| Group | Plant Type | Species | Low Wt Allowed | High Wt Allowed | Minimum | Maximum | Average | STDEV |
|-------|------------|---------|----------------|-----------------|---------|---------|---------|-------|
|-------|------------|---------|----------------|-----------------|---------|---------|---------|-------|



Production Lbs/Acre Trends

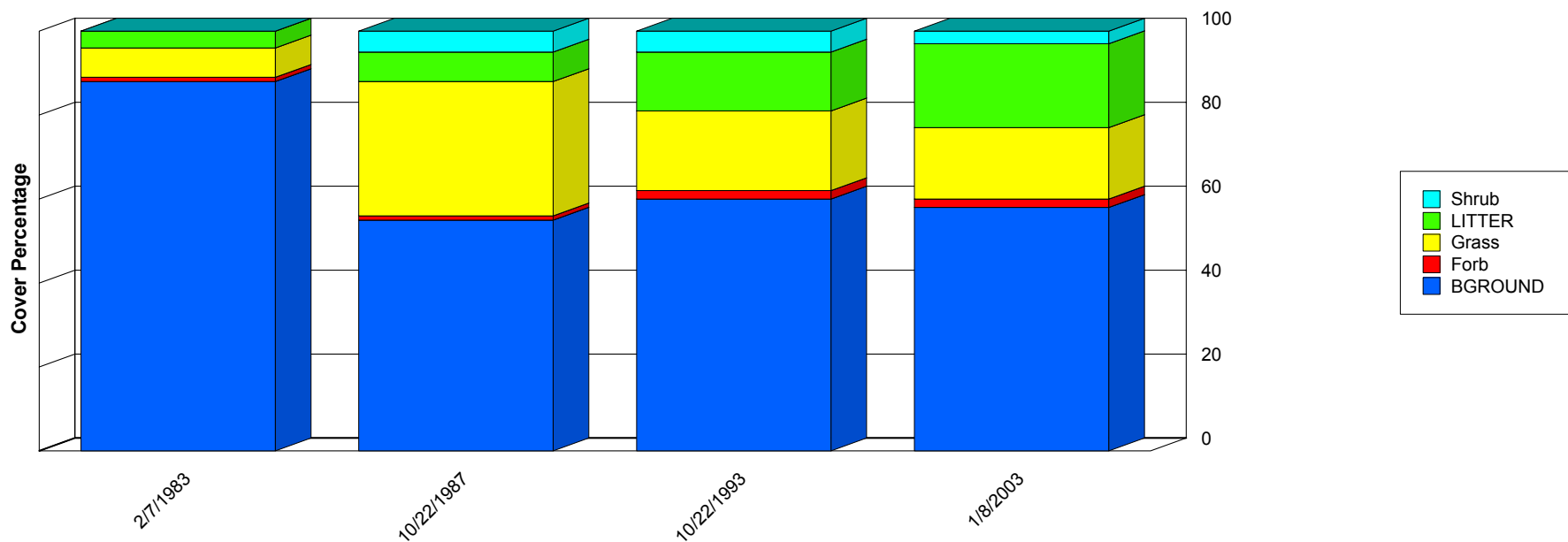


| | 2/7/1983 | 10/22/1987 | 10/22/1993 | 1/3/2003 |
|-------|----------|------------|------------|----------|
| Forb | 47.00 | 62.00 | 178.00 | 34.00 |
| Grass | 239.00 | 273.00 | 348.00 | 191.00 |
| Shrub | 11.00 | 6.00 | 0.00 | 41.00 |
| Total | 297.00 | 341.00 | 526.00 | 266.00 |

Report Parameters

SITE NAME LIKE 64053-BIG-E100
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2003

Ground Cover Trends



| | 2/7/1983 | 10/22/1987 | 10/22/1993 | 1/8/2003 |
|---------|----------|------------|------------|----------|
| BGROUND | 88.00 | 55.00 | 60.00 | 58.00 |
| Forb | 1.00 | 1.00 | 2.00 | 2.00 |
| Grass | 7.00 | 32.00 | 19.00 | 17.00 |
| LITTER | 4.00 | 7.00 | 14.00 | 20.00 |
| Shrub | 0.00 | 5.00 | 5.00 | 3.00 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 |

Report Parameters

SITE NAME LIKE 64053-NORTH-E099
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2003

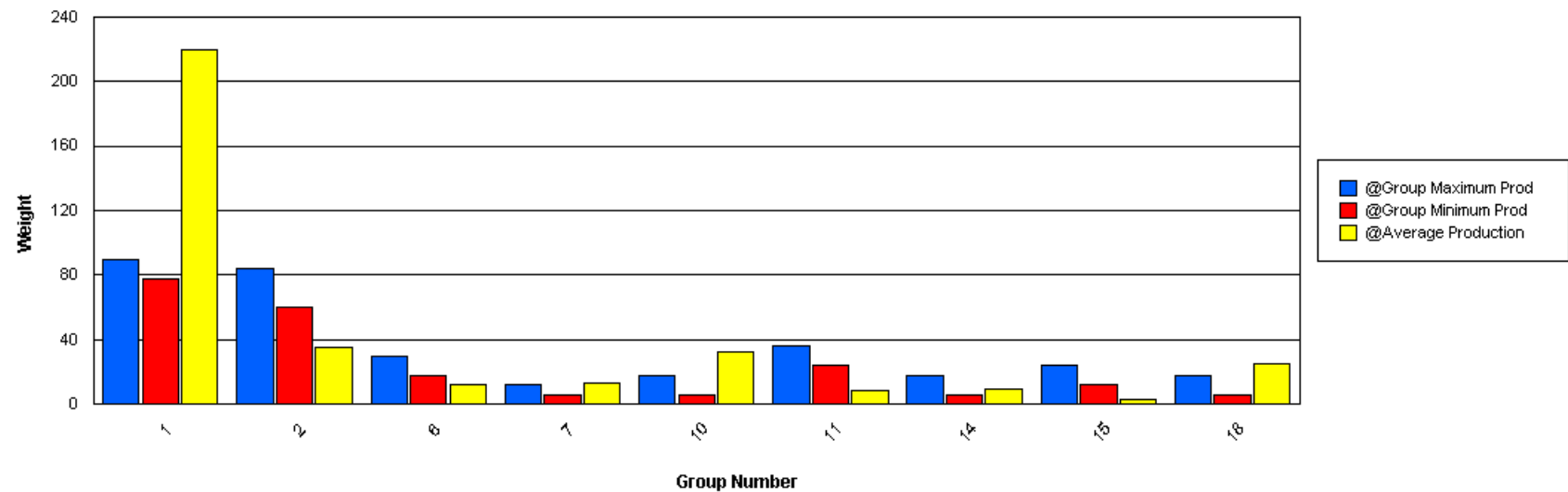
Functional / Structural Groups

Report Parameters

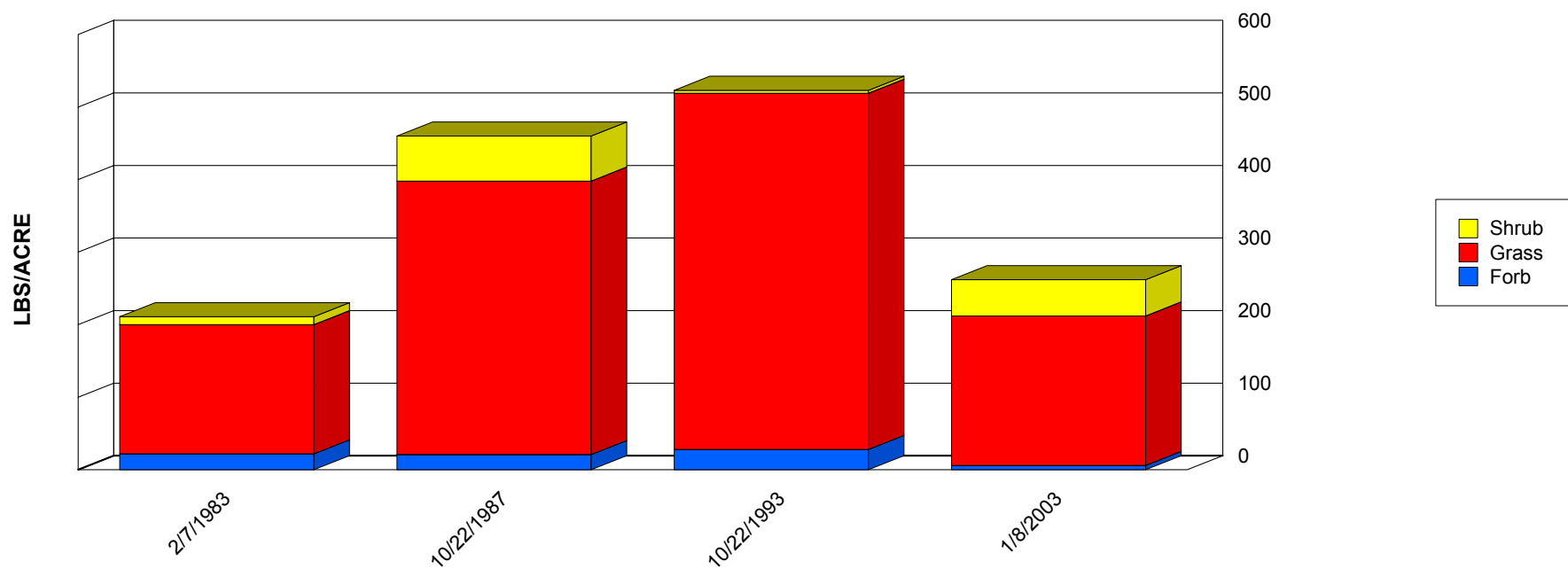
SITE NAME LIKE 64053-NORTH-E099
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2003
 MIN LBS TO GRAPH 3
 SELECTED ECOSITE 070BY066NM

| Group | Plant Type | Species | Low Wt Allowed | High Wt Allowed | Minimum | Maximum | Average | STDEV |
|-------|------------|---------|----------------|-----------------|---------|---------|---------|-------|
| 1 | Grass | BOBR | 78 | 90 | 128.00 | 186.00 | 162.75 | 24.28 |
| 1 | Grass | BOER4 | 78 | 90 | 13.00 | 156.00 | 56.50 | 58.70 |
| 2 | Grass | BOGR2 | 60 | 84 | 1.00 | 22.00 | 8.00 | 9.90 |
| 2 | Grass | SPNE | 60 | 84 | 18.00 | 39.00 | 27.25 | 7.56 |
| 6 | Grass | ARIST | 18 | 30 | 0.00 | 27.00 | 12.50 | 11.32 |
| 7 | Grass | ERPU8 | 6 | 12 | 0.00 | 7.00 | 3.75 | 2.59 |
| 7 | Grass | SPCR | 6 | 12 | 0.00 | 22.00 | 9.00 | 8.06 |
| 10 | Grass | ENDE | 6 | 18 | 1.00 | 2.00 | 1.50 | 0.50 |
| 10 | Grass | MUAR2 | 6 | 18 | 0.00 | 63.00 | 21.33 | 29.47 |
| 10 | Grass | PAOB | 6 | 18 | 2.00 | 3.00 | 2.50 | 0.50 |
| 10 | Grass | SCBR2 | 6 | 18 | 3.00 | 11.00 | 7.00 | 4.00 |
| 11 | Forb | COLDE | 24 | 36 | 0.00 | 17.00 | 8.50 | 8.50 |
| 12 | Forb | ERIOG | 0 | 18 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | Forb | ASTRA | 0 | 6 | 0.00 | 1.00 | 0.50 | 0.50 |
| 14 | Forb | PPFF | 6 | 18 | 0.00 | 22.00 | 9.50 | 9.34 |
| 15 | Forb | AAFF | 12 | 24 | 0.00 | 6.00 | 2.25 | 2.28 |
| 15 | Forb | DEPI | 12 | 24 | 0.00 | 2.00 | 1.00 | 1.00 |
| 18 | Shrub | GUSA2 | 6 | 18 | 4.00 | 40.00 | 21.50 | 14.57 |
| 18 | Shrub | OPUNT | 6 | 18 | 0.00 | 10.00 | 3.33 | 4.71 |

| Group | Plant Type | Species | Low Wt Allowed | High Wt Allowed | Minimum | Maximum | Average | STDEV |
|-------|------------|---------|----------------|-----------------|---------|---------|---------|-------|
|-------|------------|---------|----------------|-----------------|---------|---------|---------|-------|



Production Lbs/Acre Trends

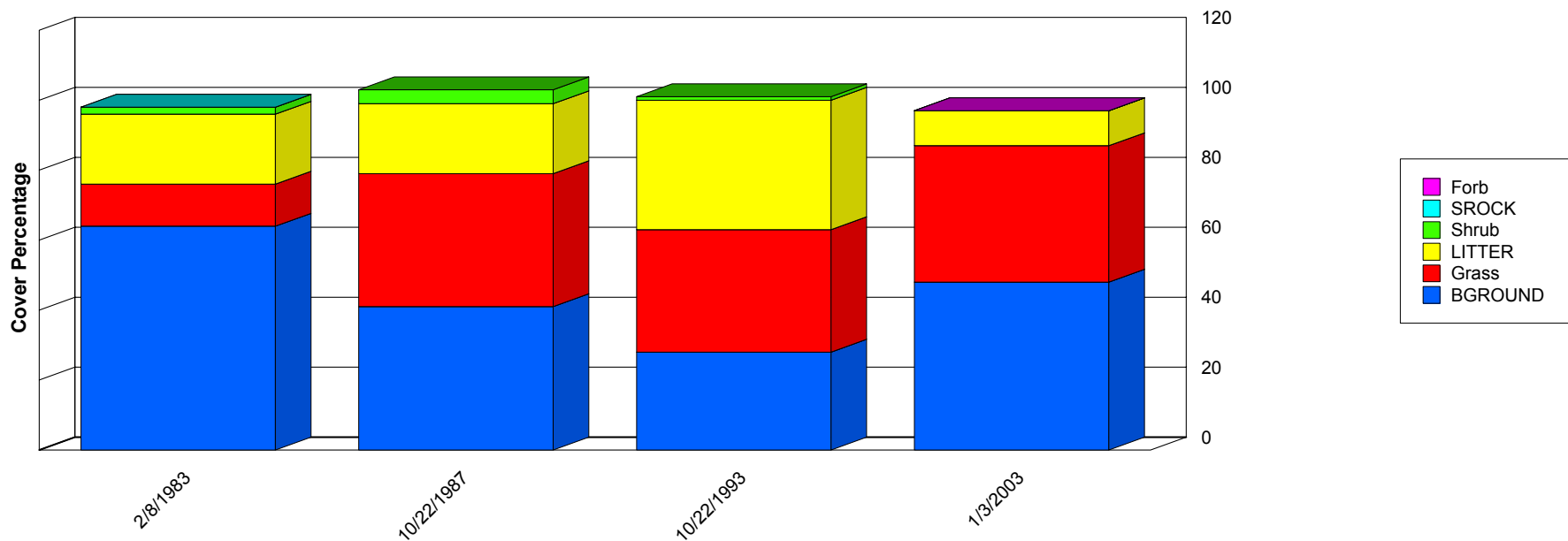


| | 2/7/1983 | 10/22/1987 | 10/22/1993 | 1/8/2003 |
|-------|----------|------------|------------|----------|
| Forb | 22.00 | 21.00 | 28.00 | 6.00 |
| Grass | 178.00 | 377.00 | 491.00 | 206.00 |
| Shrub | 11.00 | 62.00 | 4.00 | 50.00 |
| Total | 211.00 | 460.00 | 523.00 | 262.00 |

Report Parameters

SITE NAME LIKE 64053-NORTH-E099
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2003

Ground Cover Trends



| | 2/8/1983 | 10/22/1987 | 10/22/1993 | 1/3/2003 |
|---------|----------|------------|------------|----------|
| BGROUND | 64.00 | 41.00 | 28.00 | 48.00 |
| Forb | 0.00 | 0.00 | 0.00 | 0.00 |
| Grass | 12.00 | 38.00 | 35.00 | 39.00 |
| LITTER | 20.00 | 20.00 | 37.00 | 10.00 |
| Shrub | 2.00 | 4.00 | 1.00 | 0.00 |
| SROCK | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 98.00 | 103.00 | 101.00 | 97.00 |

Report Parameters

SITE NAME LIKE 64053-RIVER-E098
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2003

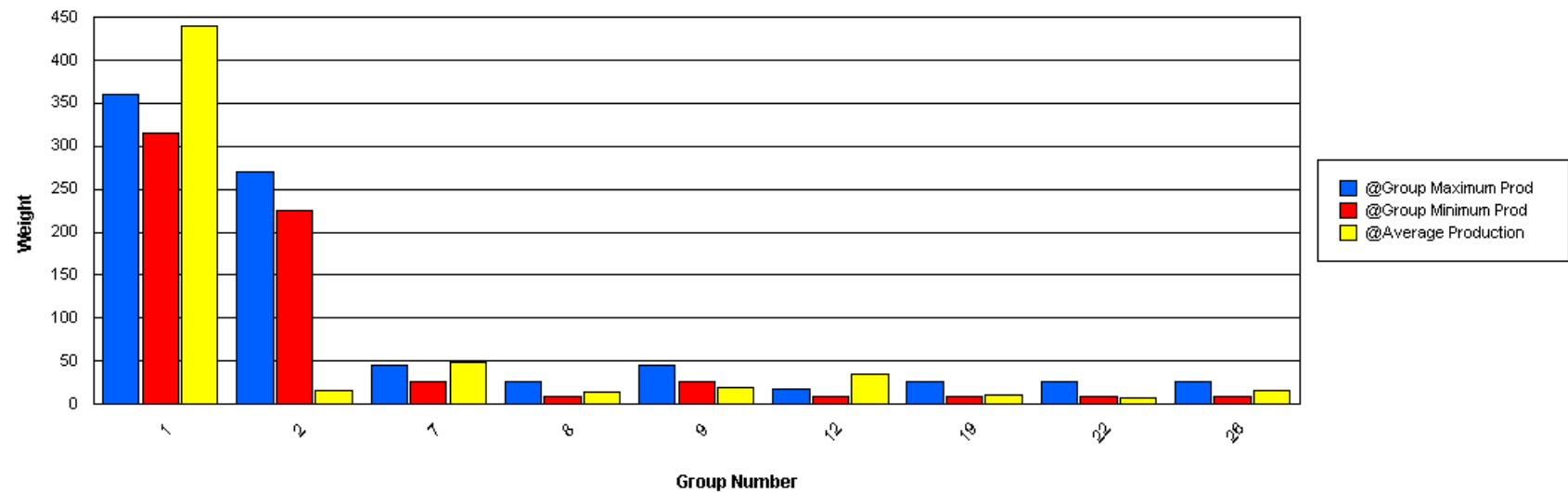
Functional / Structural Groups

Report Parameters

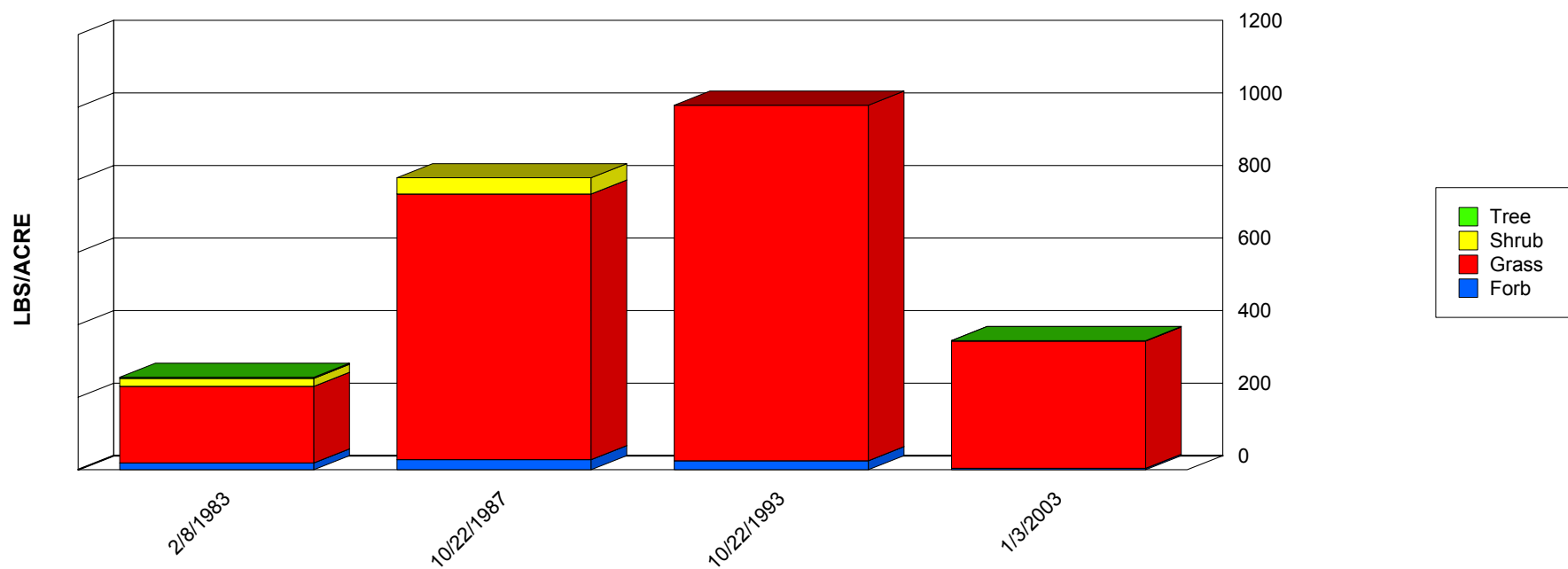
SITE NAME LIKE 64053-RIVER-E098
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2003
 MIN LBS TO GRAPH 3
 SELECTED ECOSITE 042CY007NM

| Group | Plant Type | Species | Low Wt Allowed | High Wt Allowed | Minimum | Maximum | Average | STDEV |
|-------|------------|---------|----------------|-----------------|---------|---------|---------|--------|
| 1 | Grass | HIMU2 | 315 | 360 | 139.00 | 812.00 | 405.50 | 252.06 |
| 1 | Grass | SCBR2 | 315 | 360 | 1.00 | 66.00 | 33.50 | 23.31 |
| 2 | Grass | BOER4 | 225 | 270 | 0.00 | 41.00 | 16.25 | 16.68 |
| 7 | Grass | ARIST | 27 | 45 | 0.00 | 63.00 | 29.75 | 25.71 |
| 7 | Grass | SPCR | 27 | 45 | 2.00 | 44.00 | 18.75 | 17.80 |
| 8 | Grass | PAOB | 9 | 27 | 11.00 | 16.00 | 13.50 | 2.50 |
| 9 | Grass | MUAR | 27 | 45 | 0.00 | 34.00 | 12.25 | 12.93 |
| 9 | Grass | MUAR2 | 27 | 45 | 1.00 | 11.00 | 6.00 | 5.00 |
| 9 | Grass | MURE | 27 | 45 | 0.00 | 2.00 | 1.00 | 1.00 |
| 12 | Grass | PAHA | 9 | 18 | 0.00 | 114.00 | 34.25 | 46.51 |
| 15 | Grass | TRPI2 | 0 | 9 | 0.00 | 1.00 | 0.67 | 0.47 |
| 17 | Grass | ERPU8 | 9 | 27 | 0.00 | 2.00 | 1.00 | 1.00 |
| 19 | Forb | CROTO | 9 | 27 | 0.00 | 3.00 | 1.67 | 1.25 |
| 19 | Forb | DEPI | 9 | 27 | 0.00 | 1.00 | 0.50 | 0.50 |
| 19 | Forb | PENA | 9 | 27 | 2.00 | 13.00 | 9.33 | 5.19 |
| 20 | Forb | ASTRA | 9 | 27 | 0.00 | 2.00 | 1.00 | 1.00 |
| 21 | Forb | ERTE13 | 9 | 27 | 0.00 | 2.00 | 1.00 | 1.00 |
| 22 | Forb | AAFF | 9 | 27 | 0.00 | 28.00 | 8.00 | 11.60 |
| 24 | Forb | SOEL | 9 | 27 | 0.00 | 6.00 | 2.00 | 2.83 |
| 26 | Shrub | GUSA2 | 9 | 27 | 1.00 | 22.00 | 14.67 | 9.67 |
| 26 | Shrub | OPUNT | 9 | 27 | 0.00 | 1.00 | 0.50 | 0.50 |
| 26 | Tree | YUEL | 9 | 27 | 0.00 | 3.00 | 1.50 | 1.50 |

| Group | Plant Type | Species | Low Wt Allowed | High Wt Allowed | Minimum | Maximum | Average | STDEV |
|-------|------------|---------|----------------|-----------------|---------|---------|---------|-------|
|-------|------------|---------|----------------|-----------------|---------|---------|---------|-------|



Production Lbs/Acre Trends



| | 2/8/1983 | 10/22/1987 | 10/22/1993 | 1/3/2003 |
|-------|----------|------------|------------|----------|
| Forb | 19.00 | 28.00 | 25.00 | 4.00 |
| Grass | 211.00 | 732.00 | 980.00 | 351.00 |
| Shrub | 22.00 | 45.00 | 0.00 | 1.00 |
| Tree | 3.00 | 0.00 | 0.00 | 0.00 |
| Total | 255.00 | 805.00 | 1,005.00 | 356.00 |

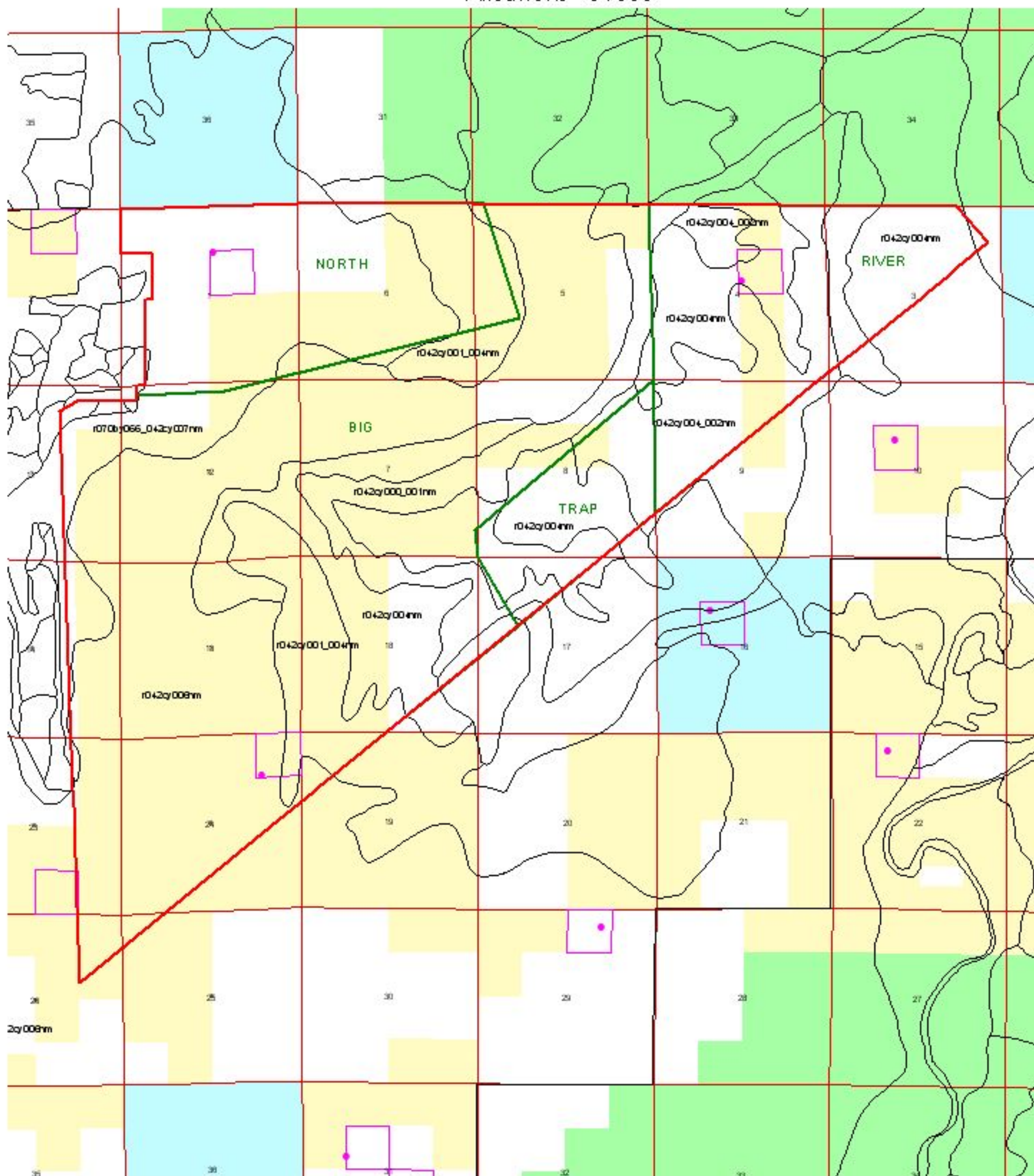
Report Parameters

SITE NAME LIKE 64053-RIVER-E098
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2003



Rangeland Health Assessment Ecological Sites

Allotment - 64053



Study Plots
40 Acres



Study Locations



State Private Public FWS

— Allotment Boundary
— Pasture Boundary
— Ecological Site Boundary

Produced by the Roswell Field Office
GIS Specialist on May 14, 2003.

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